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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,948	12/19/2000	Shigeru Okita	313MC/49472	5315

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EXAMINER

NGUYEN, XUAN LAN T

ART UNIT PAPER NUMBER

3683

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/719,948	<b>Applicant(s)</b> OKITA ET AL.	
	<b>Examiner</b> Lan Nguyen	<b>Art Unit</b> 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 01 August 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-912) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

*[Signature]*  
C. J. TOPHER P. SCHWARTZ  
PRIMARY EXAMINER

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The references enclosed with the Amendment filed 8/01/02 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office to be listed on a PTO-1449 form. If the Applicant would like for these references to be listed on the face of the patent should this application matures into a patent, Applicant needs to submit a PTO 1449 form with these references properly listed.

### ***Drawings***

2. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 8/01/02 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 1, 3, 5, 8, 9 and 10 claim "optionally having a cage". This renders the claims indefinite. The Examiner has reviewed the Applicant's argument and MPEP section 2173.05(h). The Examiner maintains that "optionally" is improper because of the following reasons. First, if the cage is not in the independent claims then the subsequent claiming of said cage in the dependent claims results in the lack of antecedence basis of said cage. Secondly, as mentioned by Applicant in the Amendment dated 8/01/02, said cage is the essence of this invention. If it is unclear that the Applicant would or would not claim said cage; then it is certainly unclear of what invention is the Applicant intending to claim.
- Claims 1-14 are replete with the alternative form "or" which make them very confusing. If the Applicant insists on using the alternative form "or", it is suggested that Applicant rewrite the claims to make them less confusing. The Examiner is providing an example of claim 3. "A rolling bearing comprising at least an outer ring having an outer ring raceway, an inner ring having an inner ring raceway, and rolling elements rotatably disposed between the outer ring raceway and the inner ring raceway, and having a cage for evenly distributing the rolling elements in the rotational direction of the rolling elements between the outer ring raceway and the inner ring raceway, and used under lubrication wherein the lubrication means comprising: a lubricating oil, a grease containing a fluoro-containing polymer, or a gas containing fluorides; said rolling elements are balls with contact angle from 10° to 45°; said bearing further comprises a raceway surface roughness of the outer ring and inner ring to be 0.05µm Ra or

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less, the ratio of the raceway surface roughness of the outer ring relative to the roughness of the rolling element is 6 or less, or the ratio of the raceway surface roughness of the inner ring relative to the surface roughness of the rolling elements is 6 or less."

- Once again, the Examiner urges the Applicant to review the claims carefully and make the appropriate corrections.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallin (USP 5,273,413) in view of Kinno et al (USP 5,845,997).

Wallin shows a rolling bearing, as in the present invention, comprising: an outer ring, an inner ring, rolling elements as shown in figure 2, with a contact angle of 30 degrees in the abstract. Wallin is silent of how the bearing is lubricated. Kinno et al. teaches the concept of using polytetrafluoroethylene (PTFE) to lubricate bearings. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have considered using PTFE as a lubricant for Wallin's bearing in order to keep the bearings working sufficiently even in harsh environment as taught by Kinno et al.

Re: claim 2, Wallin shows in the abstract, the contact angle is 30 degrees.

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Re: claim 7, the claimed feature is considered a design feature where the hardness of the rolling bodies and the hardness of the raceways can be designed to accommodate different applications.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wallin (USP 5,273,413) in view of Kinno et al. (USP 5,845,997) and further in view of Tanaka et al. (USP 5,998,042).

Wallin's bearing, as modified, is silent of the material make up of the rolling elements. Tanaka et al. teach the use of rolling elements wherein the elements are made of steel with at least 10% by weight of Cr in the abstract. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used rolling elements with the content of steel with at least 10% by weight of Cr as taught by Tanaka in order to provide strength and wear resistance to the rolling elements.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wallin (USP 5,273,413) in view of Kinno et al. (USP 5,845,997) and further in view of Niizeki (JP 09229072 A).

Wallin's bearing, as modified, lacks the absent of obstacles with a mean diameter of 3 or more. Niizeki teaches the concept of having a raceway surface without obstacles of mean diameter of 3 or more in the abstract to improve the performance of the bearing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have construct Wallin's bearing with raceway surface without

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obstacles of mean diameter of 3 or more to improve the performance of the bearing as taught by Niizeki.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Niizeki (JP 09229072 A) in view of Yasui et al. (JP 06165790 A) and further in view of Masuda et al. (USP 5,199,799).

Niizeki show a rolling bearing with an outer race 2, an inner race 3, rolling elements 4, a cage 5 wherein said cage is made of PTFE in the abstract. Niizeki lacks the chamfering on both sides of the cage and having a hole on the bottom. Yasui et al. teach the concept of chamfering the sides of the cage. Masuda et al. teach the concept of having a hole on the bottom of the cage. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Niizeki's bearing with a chamfered cage having holes on the bottom of the cage in order for lubrication to be evenly distributed within the cage as taught by Yasui and Masuda.

***Allowable Subject Matter***

10. Claims 3, 5 and 11-15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. Claims 8 and 10 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

***Response to Arguments***

12. Applicant's arguments filed 8/1/02 have been fully considered but they are not persuasive. Applicant's argument is more specific than the claims. Applicant argues that Wallin's bearing assembly is for a dry air screw compressor and that said bearing assembly would not need lubrication. Hence, there is no reason to combine with Kino's teaching of the use of solid lubrications in bearing assemblies. The Examiner disagrees. First, there is no mentioning in Wallin's patent of the fact that Wallin's bearing assembly would not need lubrication in order to supply dry air. Secondly, Kino teaches the use of solid lubrications. Hence, said solid lubrications would not wet the required dry air of Wallin's dry air screw compressor. Applicant further argues that the combination of Niizeki, Yasui and Masuda does not teach a cage of excellent resistant to heat and chemical. However, claim 9 does not require this limitation. The combination of Niizeki, Yasui and Masuda teach the structure of the rolling bearing claimed in claim 9. All three references of Niizeki, Yasui and Masuda pertain to bearing art and would have been obvious for one of ordinary skill in the art to combine.

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is 703-308-8347. The examiner can normally be reached on M-F, 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-4177.

XLN

XLN  
October 11, 2002

CHRISTOPHER P. SCHNEIDER  
PRIMARY EXAMINER  
